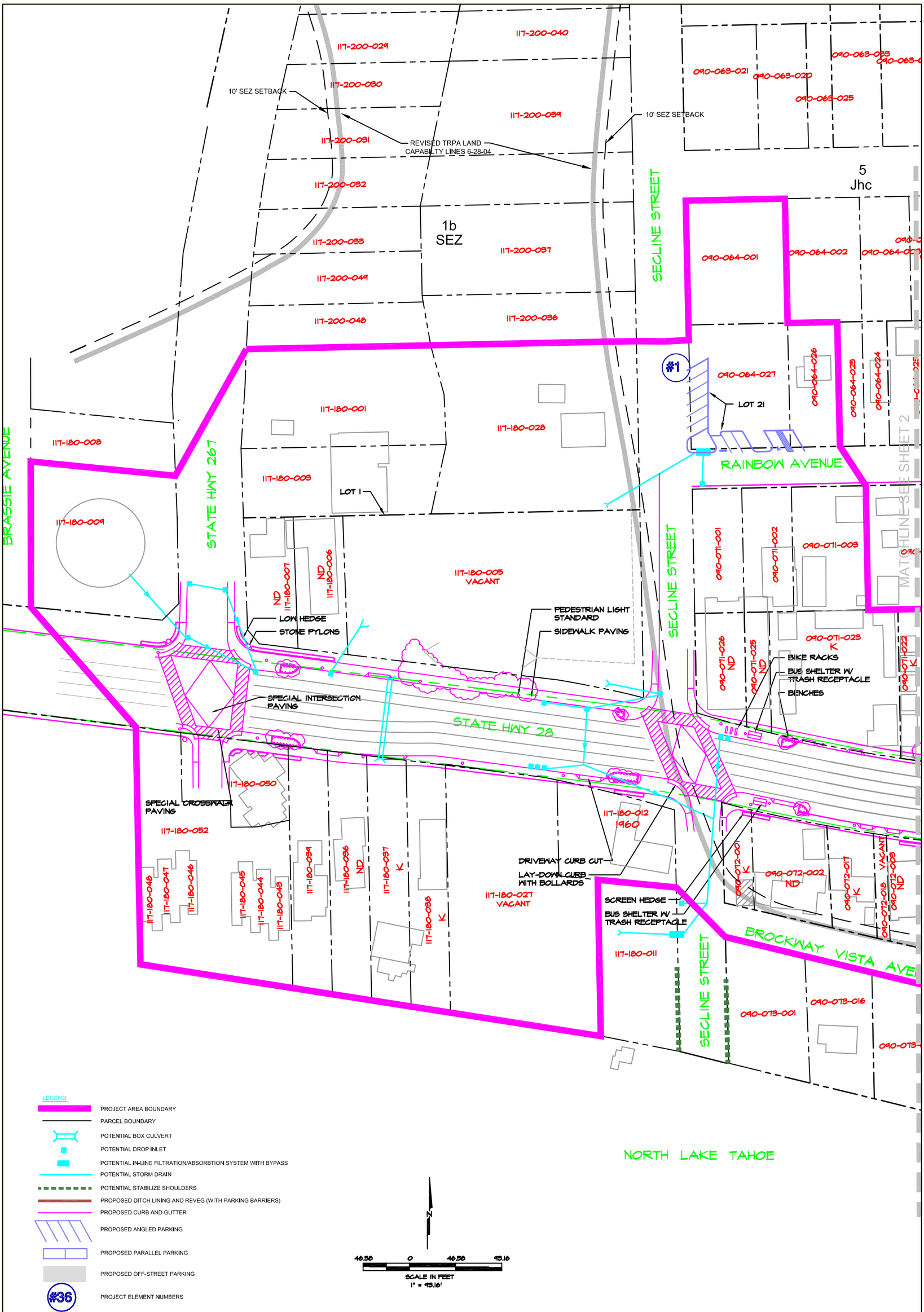
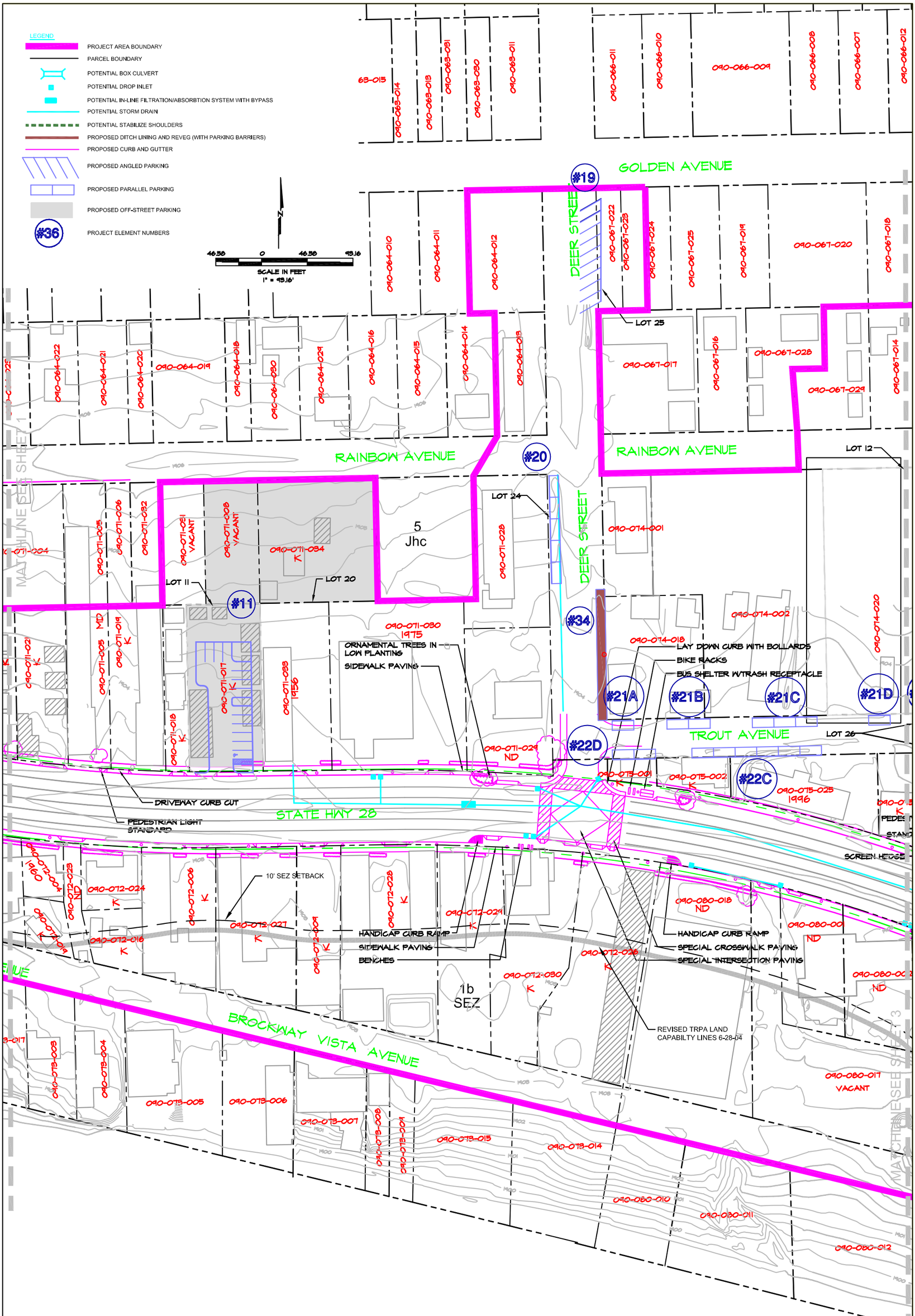


Figure 2 Sheet 1 of 6
Kings Beach Comercial Core Improvement Project
Project Elements



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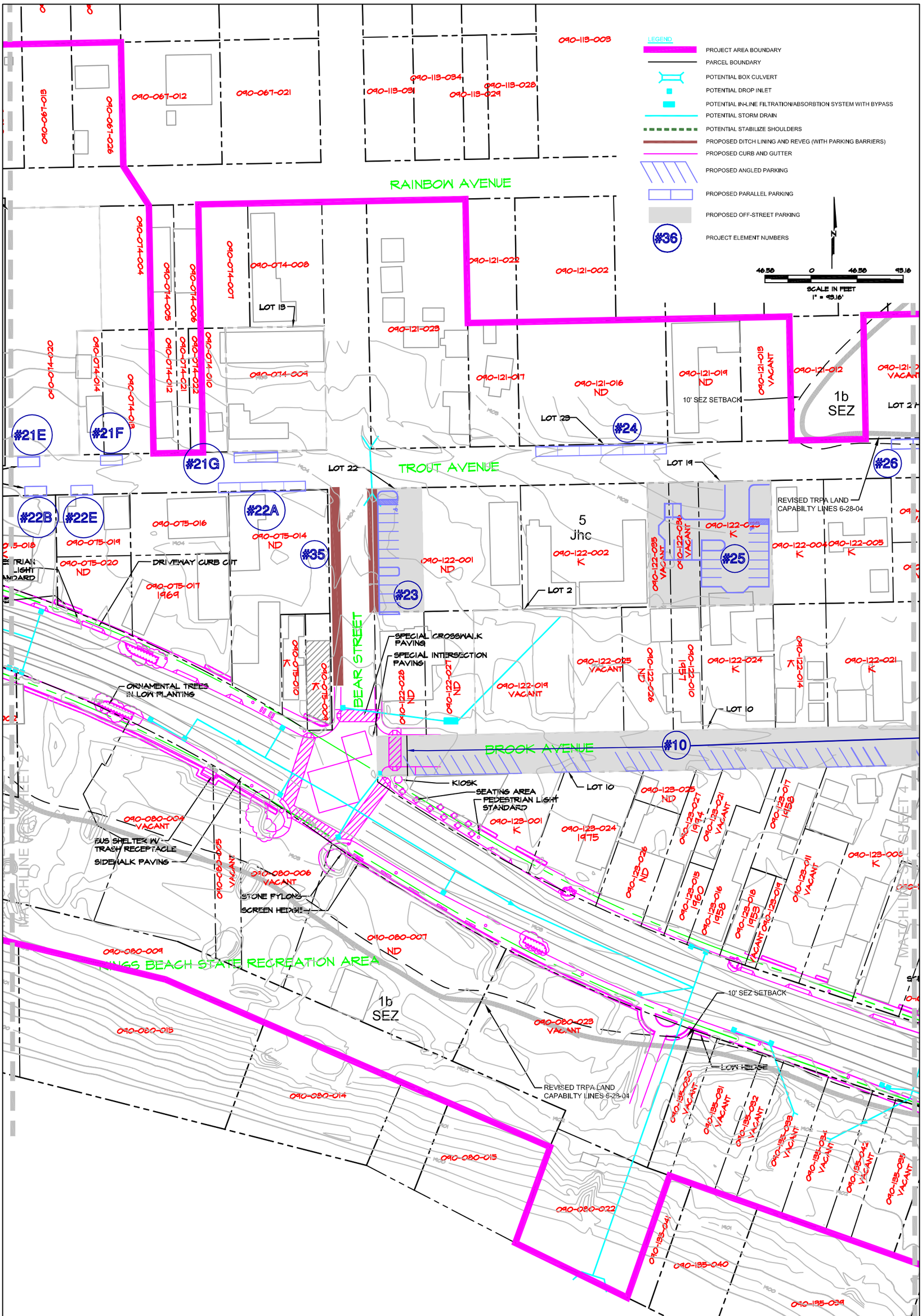

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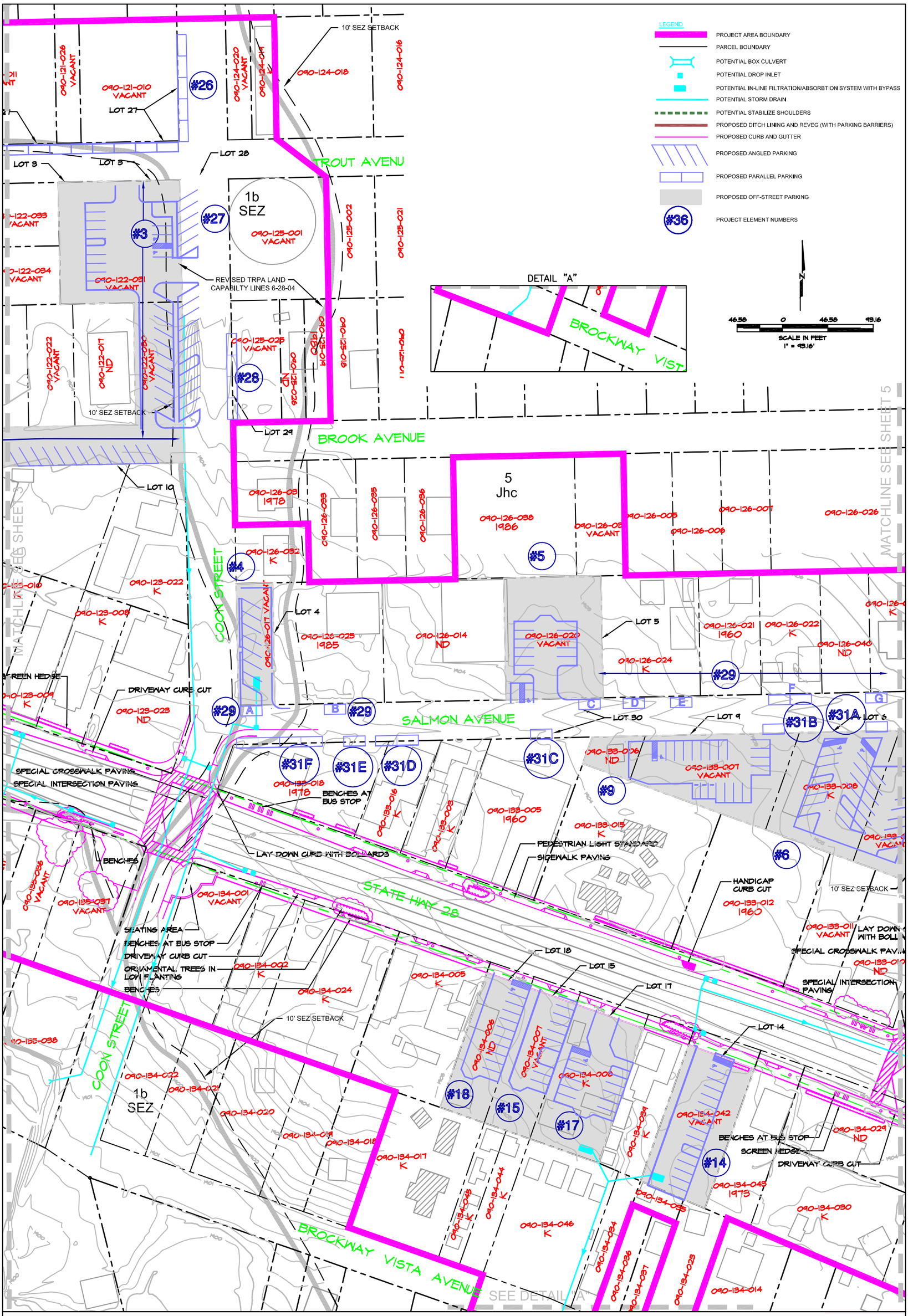

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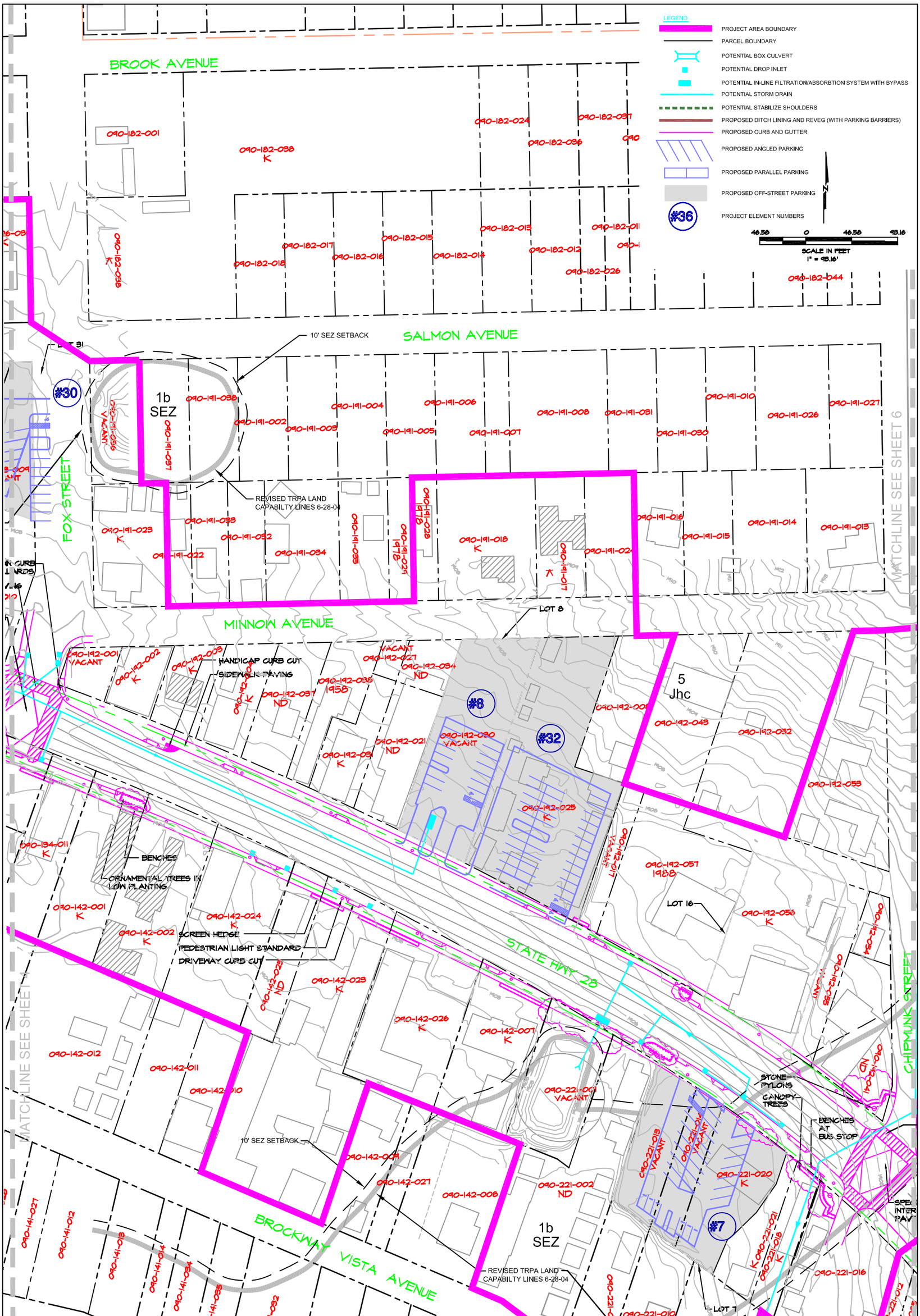

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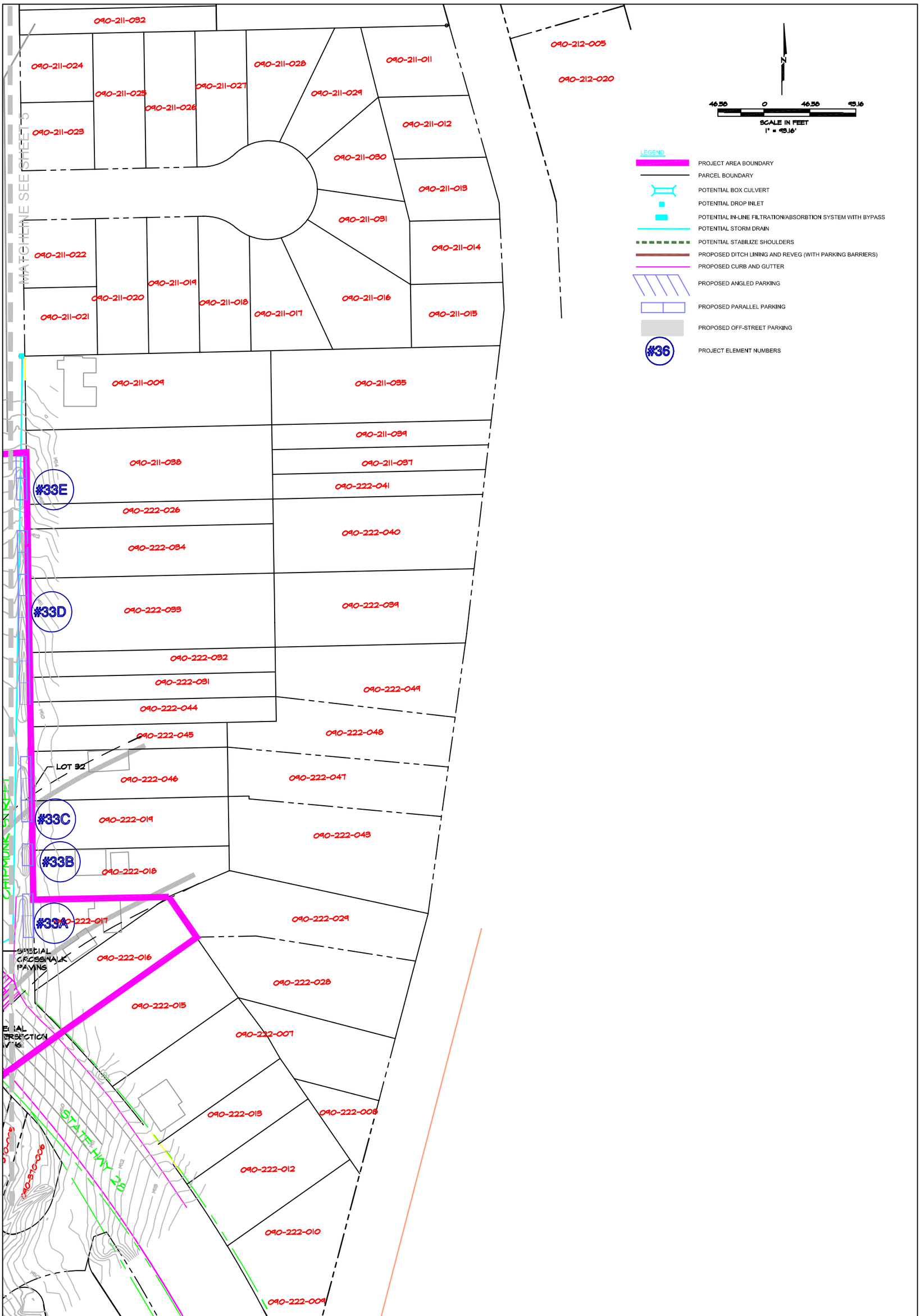

Figure 2 Sheet 6 of 6
Kings Beach Comercial Core Improvement Project
Project Elements

2.0 STUDY METHODS

2.1 Studies Required

Biological studies conducted within the Kings Beach Project area, hereafter referred to as the Kings Beach biological study area (BSA), include inventories of vegetation and wildlife habitats within the BSA, including important natural communities (stream environment zones [SEZs], late seral/old-growth trees [LSOGs], and wetlands), and focused surveys for special-status plant and wildlife species and for weedy plant species.

2.1.1 Pre-Field Investigation

Prior to conducting field surveys, lists of species (common, special-status and weedy) and habitats potentially occurring within the Project vicinity were developed based on information compiled from the U.S. Fish and Wildlife Service (USFWS), USFS, TRPA, California Department of Fish and Game's (DFG's) California Natural Diversity Database (CNDDB Rarefind 2006 records for Tahoe City and King's Beach 7.5-minute USGS quads), the California Native Plant Society ("CNPS" Electronic Inventory 2006) and from available scientific literature. Documents and publications that provided the principal information on vegetation included *Vegetation of the Lake Tahoe Region* (TRPA 1971), *A Manual of California Vegetation* (Sawyer and Keller-Wolf 1995), *Lake Tahoe Basin Sierra Nevada Natural History* (Storer and Usinger 1963), *Tahoe Basin Forest Cover Types of the United States and Canada* (Eyre 1980), *Lake Tahoe Basin Plants of the Tahoe Basin: Flowering Plants, Trees, and Ferns* (Graf 1999), and *Lake Tahoe Watershed: Volume I* (USDA 2000).

2.1.2 Vegetation and Special-Status Plant Surveys

Field vegetation surveys included initial spatial characterization of the vegetation communities, including LSOG areas and stream environment zones (SEZs), followed by systematic pedestrian surveys for special-status plants and weedy species. Special-status plant surveys were timed to be coincident with known blooming periods for these species. All occurrences of special-status plants and weedy species, and the spatial extent of existing vegetation communities and LSOG and SEZ areas, were recorded in the field with a global position system (GPS) and on aerial photographs, and later transferred to Project area plans.

All vegetation surveys for the Project were conducted between April 2001 and September 2005. The specific dates and focus of each survey are summarized in Table 1.

Table 1. Vegetation Surveys for the Kings Beach Commercial Core Improvement Project

Date	Survey Focus	Surveyors
April 24 and 30, 2001	General vegetation, special-status communities, special-status plants (including upswept moonwort, scalloped moonwort, slender moonwort, Mingan moonwort, western goblin, subalpine fireweed, and Washoe tall rockcress), wetlands, wildlife and wildlife habitat; and weedy plants	MACTEC Engineering and Consulting (MACTEC) staff: Nancy Bish, David Arsenault, Jackee Picciani, and Amy Linnerooth
May 1 and 30, 2001	Special-status plants (including upswept moonwort, scalloped moonwort, slender moonwort, Mingan moonwort, western goblin, subalpine fireweed, and Washoe tall rockcress) wetlands, wildlife, and weedy plants	MACTEC staff: Nancy Bish, David Arsenault, Jackee Picciani, and Amy Linnerooth
July 20, 2001	Special-status plants (including upswept moonwort, scalloped moonwort, slender moonwort, Mingan moonwort, western goblin, subalpine fireweed, Washoe tall rockcress, and Tahoe yellow cress), wetlands, wildlife, and weedy plants	MACTEC staff: Nancy Bish, David Arsenault, Jackee Picciani, and Amy Linnerooth
May 28 and 29, 2002	Special-status plants (including upswept moonwort, scalloped moonwort, slender moonwort, Mingan moonwort, western goblin, subalpine fireweed, and Washoe tall rockcress), wetlands, wildlife, and weedy plants	MACTEC staff: Nancy Bish, David Arsenault, Jackee Picciani, and Amy Linnerooth
June 4, 5 and 5, 2002	Special-status plants (including upswept moonwort, scalloped moonwort, slender moonwort, Mingan moonwort, western goblin, subalpine fireweed, Washoe tall rockcress), wetlands, wildlife, and weedy plants.	MACTEC staff: Nancy Bish, David Arsenault, Jackee Picciani, and Amy Linnerooth
September 3, 4, 5, and 6, 2002	Special-status plants (including upswept moonwort, scalloped moonwort, slender moonwort, Mingan moonwort, western goblin, subalpine fireweed, Washoe tall rockcress), wetlands, wildlife, and weedy plants.	MACTEC staff: Nancy Bish, David Arsenault, Jackee Picciani, and Amy Linnerooth
June 2004	Wildlife	TRPA staff
October 5, 2004	Special-status plants (including Bolander's candle moss, Blandow's helodium moss, broad-nerved hump moss and veined water lichen); wetlands, and wildlife.	MACTEC staff: Nancy Bish, David Arsenault, , and Amy Linnerooth
September 1, 2, 8, and 22, 2005	Special-status plants (Tahoe yellow cress [BMP survey]) and trees.	MACTEC staff: Jackee Picciani and Amy Linnerooth
March 23, 2006	Wetlands and waters of the United States	MACTEC staff: Jackee Picciani
May 24 and 25, 2006	Special-status bats and other wildlife species, including nesting raptors and nesting swallows	Jones & Stokes staff: Ed West

Vegetation surveys focused on identification and characterization of existing land cover types and special-status plant communities in the BSA area. These surveys included:

- Visual characterization of existing vegetation in the BSA by species composition and dominance determinations;
- Identification and spatial characterization of special-status plant communities, including LSOG areas and SEZs;
- Identification, measurement, and mapping of all trees in the BSA;
- Delineation and/or assessment of wetlands and other waters of the United States;
- Pedestrian surveys for special-status plants and their habitats; and
- Identification and mapping of weedy plant species.

2.1.2.1 Wetlands and Waters of the United States

Wetlands and waters of the United States in the BSA were delineated in accordance with Section 404 of the Clean Water Act, the Corps *1987 Wetlands Delineation Manual* (Environmental Laboratory 1987), and the Corps Sacramento District "Minimum Standards for Acceptance of Preliminary Wetland Delineations" (USDA 1994) for surveys conducted in 2001, 2002, 2004, and 2006. General area photographs, routine wetland determination forms, and plot photographs were used to document the wetland resources in the BSA.

2.1.3 Tree Inventory

All coniferous trees occurring within individual on- and off-street Project element sites were inventoried in September 2005. Data collected included species identification, height (measured with a clinometer), diameter at-breast-height (dbh) (measured with a dbh tape) and individual locations. All trees were mapped, and their locations were used in planning the location and configuration of parking sites and lot within the Project area. The tree inventory identified LSOGs on developed and undeveloped lots throughout the BSA.

2.1.4 Weedy Plants

Weedy plant species were surveyed in the BSA during the 2001, 2002, and 2004 field inventories (Table 1). All State of California noxious weeds and Priority and Invasive weeds of the Tahoe Basin observed were identified and mapped. Disturbed soils and drainage ditches immediately adjacent to roadways were targeted as the most likely habitats for these species. Any unknown plant was collected and identified to the species level when possible.

2.1.4.1 Wildlife Surveys

Wildlife surveys were conducted during the 2001 and 2002 breeding seasons (May, June, and July). Two days each month were spent conducting meandering pedestrian transects in May 2001 and 2002. Additional transects were conducted over 3 days in June 2002 and 2004, and

1 day in July 2001. Meandering pedestrian transects also were conducted for wildlife species during May, September, and October (bird migration months). Two days were spent conducting transects in April 2001, 5 days in September 2002, and 1 day in October 2004.

Wildlife surveys conducted in the Griff Creek drainage during 2001, 2002, and 2004 also included a visual search for aquatic species (fish, reptiles, and amphibians).

Field surveys to identify special-status bats and other wildlife species, including nesting raptors and nesting swallows, located within the BSA were conducted by Jones & Stokes biology staff during the 2006 field inventories (Table 1). The surveys were conducted May 24 and 25, 2006. Visual surveys were conducted throughout the BSA for bat sign in buildings during the day and for bat activity after dusk. Also a Peterson D 240x ultrasonic bat detector was used to detect bat presence in buildings and while flying around the area. Bats (possibly Myotis yumanensis) were observed at a pond offsite, but no bats were observed onsite during the surveys. However, suitable bat roosting habitat was found within the BSA, including buildings and large trees. Cliff swallows (*Petrochelidon pyrrhonota*) were observed flying through the BSA and gathering mud along the Griff Creek drainage near the lake shoreline, but no nesting colonies were observed. Canada geese (*Branta canadensis*), Steller's jay,(*Cyanocitta stelleri*), California gull (*Larus californicus*), Brewer's blackbirds (*Eupahgus cyanocephalus*), Cliff swallows, American robin (*Turdus migratorius*) and European starlings (*Sturnus vulgaris*) were the migratory bird species observed during the survey.

2.2 Personnel and Survey Dates

Biological resource surveys within the BSA were conducted by MACTEC wildlife biologists Nancy Bish and David Arsenault, botanist Jackee Picciani, and environmental scientist Amy Linnerooth. Follow-up surveys in 2006 were conducted by Jones & Stokes biologist Dr. Ed West. The survey descriptions, dates, and personnel involved in each survey are presented in Table 1.

2.3 Agency Coordination and Professional Contacts

Prior to the initiation of field surveys, MACTEC contacted local resource agencies, organizations, and local experts for the most current information on the occurrences and status of biological resources in the BSA. People contacted included Shane Romsos, Sloan Gordon, J. Jones and M. Vollmer (Tahoe Regional Planning Agency), Gail Durham, Molly Hurt, Shana Gross and S. Spaulding (USFS), Richard Gebhart (Corps), S. Kehr (DFG), E. Peterson (Nevada Natural Heritage Program), A. Stanton (BMP Ecosciences), and Charles Zier (Geoarch Sciences).

DFG's CNDDB was searched for information on known special-status plant wildlife species and natural community occurrences in the Project area. A request also was sent to USFWS for a list of federally listed species that could potentially occur in the BSA.

2.4 Limitations That May Influence Results

2.4.1 Vegetation

2.4.1.1 Special-Status Plants

The list of special-status plant species in the region is constantly being revised. Because the list prior to 2004 did not include nonvascular plants, surveys conducted in the BSA prior to that time did not include veined water lichen and moss species. The areas surveyed within the BSA also have changed over time. While the 2001 and 2002 survey areas included the Griff Creek SEZ that has mesic riparian habitat presumably suitable for the moonworts, mosses, and veined water lichen and subalpine fireweed (a vascular species) that were added to the special-status list later, these species were not surveyed for at that time. Additionally the 2004 and 2005 surveys focused only on the riparian habitats in roadside drainages within the BSA. Because of these survey restrictions, we cannot definitively state that the aforementioned special-status plants are not present in the Griff Creek SEZ. There is also a chance that the surveyor did not observe and identify all regional species of concern within the BSA.

Wetland delineation and other waters of the United States survey: The 2001 wetland delineation was conducted at maximum hydrology in April and May, but 2000–2001 was a below-normal precipitation year. Therefore, interpretations of wetland hydrology were conservative. Also, some of the plant species were not identifiable to the species. However, this delineation was subsequently verified by the Corps. The 2002 investigation was conducted in September, well after maximum hydrology for the year. Therefore, hydrology was inferred based on soil characteristics and vegetation for the wetland plots, and channel characteristics determined the presence of other waters of the U.S. as surface water was not present. Also, the general assessment conducted in 2004 was qualitative and does not contain quantitative information. Due to the presence of 0.2 to 4.0 feet of snow, the March 2006 investigation was unable to determine the presence and extent of additional potential jurisdictional wetland resources within the project area.

2.4.1.2 Weedy Plant Species

The 2001 and 2002 surveys were the most comprehensive BSA weed surveys in terms of area covered and times visited throughout the growing season. Subsequent 2004 and 2005 surveys, were restricted to the most disturbed habitats within the BSA—roadside shoulders and drainages, and formerly developed and disturbed parcels. Therefore, these efforts served to verify prior occurrences of weedy plant species as well as locate new ones. However, there is a chance that the surveyor did not observe and identify all weedy plant species within the BSA.

2.4.2 Wildlife

The wildlife species observed were only those that were visibly active during the time of day and season that the surveys were conducted and in the specific habitats surveyed. Other species undoubtedly occur within the BSA that were not recorded due to the limitations of the survey design.

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3.0 ENVIRONMENTAL SETTING

The Project lies along the north shore of Lake Tahoe (Figure 1). Lake Tahoe is approximately 497.28 square kilometers (192 square miles) in size and one of the highest lakes (1,898.60 m [6,229 ft] elevation) in the United States. Mean annual precipitation ranges from over 55 inches/year in watersheds on the west side of the basin to about 26 inches/year near the lake on the east side of the basin. Most of the precipitation falls as snow between November and April. There is a pronounced annual runoff of snowmelt in late spring and early summer. In some years, summertime monsoonal storms from the Great Basin bring intense rainfall, especially to high elevations on the east side of the basin. High elevation and cool temperatures result in a short growing season, with an average of only 70 to 120 frost-free days per year (TRPA 1971).

Vegetation in the basin is dominated by mixed conifer forest of Jeffrey pine (*Pinus jeffreyi*), lodgepole pine (*P. murrayana*), white fir (*Abies concolor*), and red fir (*A. magnifica*). The basin also contains significant areas of wet meadows and riparian areas, dry meadows, brush fields, and rock crop areas. Soils in the basin are primarily derived from andesitic volcanic rocks and grandodiorite, with minor areas of metamorphic rock. Some of the valley bottoms and lower hill slopes are mantled with glacial moraines, or glacial outwash material. The basin soils are generally 65–85% sand.

3.1 Description of the Existing Biological and Physical Conditions

3.1.1 Biological Study Area

The Project BSA is approximately 325.77 hectares (805 acres), including a portion of SR 28, and residential and commercial surface streets adjacent to developed (urban) and undeveloped parcels (Figures 3 and 4). The boundaries of the BSA are Chipmunk Street to the east, SR 267 to the west, along a diagonal running west to east from Rainbow to Minnow Avenue to the north, and the shoreline of Lake Tahoe to the south.

3.1.2 Physical Conditions

The topography of the BSA is a gradual slope from the Project's northern boundary down to the shore of Lake Tahoe. Elevations range from approximately 1,914.14 m (6,280 ft) above mean sea level (amsl) to 1,898.90 m (6,230 ft) amsl at the lakeshore. The hydrology of the BSA mainly consists of Griff Creek, an additional ephemeral creek, and several scattered wetland areas (Figure 3). Surface water flow includes natural snowmelt and rain runoff. The climate of the site mirrors that of the Tahoe Basin, as described above.

The soils of the BSA sinclude alluvial (Gravelly Alluvial Land), morainal (Jabu), upland (Umpa), and Marsh soil types (SCS, USFS 1974). Alluvial soils are usually clay, silt, sand, gravel, or similar loose material deposited by running water. Morainal soils are an accumulation of earth and stones carried and finally deposited by a glacier. Upland soils are well-drained, coarse-grained soils. Marsh soil is the only soil type within the BSA that is hydric (i.e., soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part of the soil profile (USDA, NRCS 1995).

3.1.3 Biological Conditions in the Biological Study Area

This section describes the biological setting of the BSA, including the vegetation communities; common, special-status, and invasive plant species; wetlands; wildlife; and wildlife habitat.

3.1.3.1 Vegetation Communities

The BSA is characterized by two principal vegetation communities: urban-altered Jeffrey pine and montane riparian. Several scattered wetland areas also are located within the area.

Urban-Altered Jeffrey Pine

The BSA contains approximately 313.79 hectares (775.4 acres) of urban–altered Jeffrey pine. This community is predominately second- and third-growth remnant forest stands of Jeffrey pine with incense-cedar (*Calocedrus decurrans*), some white fir, and ponderosa pine (*Pinus ponderosa*) providing additional tree cover. Commercial and residential areas are interspersed throughout the forest stands. The commercial zone of the Project area adjacent to SR 28 is primarily covered with structures and other hardscape features. The shrub understory within this urbanized community consists of sparse and scattered montane mixed chaparral species, including greenleaf manzanita (*Arctostaphylos patula*), antelope bitterbrush (*Purshia tridentata*), and snowberry (*Symphoricarpus* spp.). The herbaceous component of the understory is largely lacking. LSOGs, including Jeffrey pine, ponderosa pine, and incense cedar, are distributed sporadically throughout the BSA. Figure 3 shows the locations of these trees.

Montane Riparian

Riparian vegetation is located within the Griff Creek SEZ, the Kings Beach State Recreation Area, drainage outlets on the beach, topographically low areas located south of SR 28, and rock-lined channels within the residential and commercial areas that collect surface drainage (Figure 3). Predominant species include quaking aspen (*Populus tremuloides*), black cottonwood (*Populus balsamifera* ssp. *trichocarpa*), mountain alder (*Alnus incana* ssp. *tenuifolia*), and white poplar (*Populus alba*) in the tree overstory; and Woods rose (*Rosa woodsii*), chokecherry (*Prunus virginiana*), willows, and currant (*Ribes* spp.) in the shrub understory. Herbaceous species commonly observed in these areas include horsetail (*Equisetum* spp.), sedge (*Carex* spp.), rush (*Juncus* spp.), and Kentucky bluegrass (*Poa pratensis*). A band of emergent vegetation consisting of small fruit bulrush (*Scirpus microcarpus*) also was observed on a low-lying bench adjacent to Griff Creek and the containment basin (Figure 3).

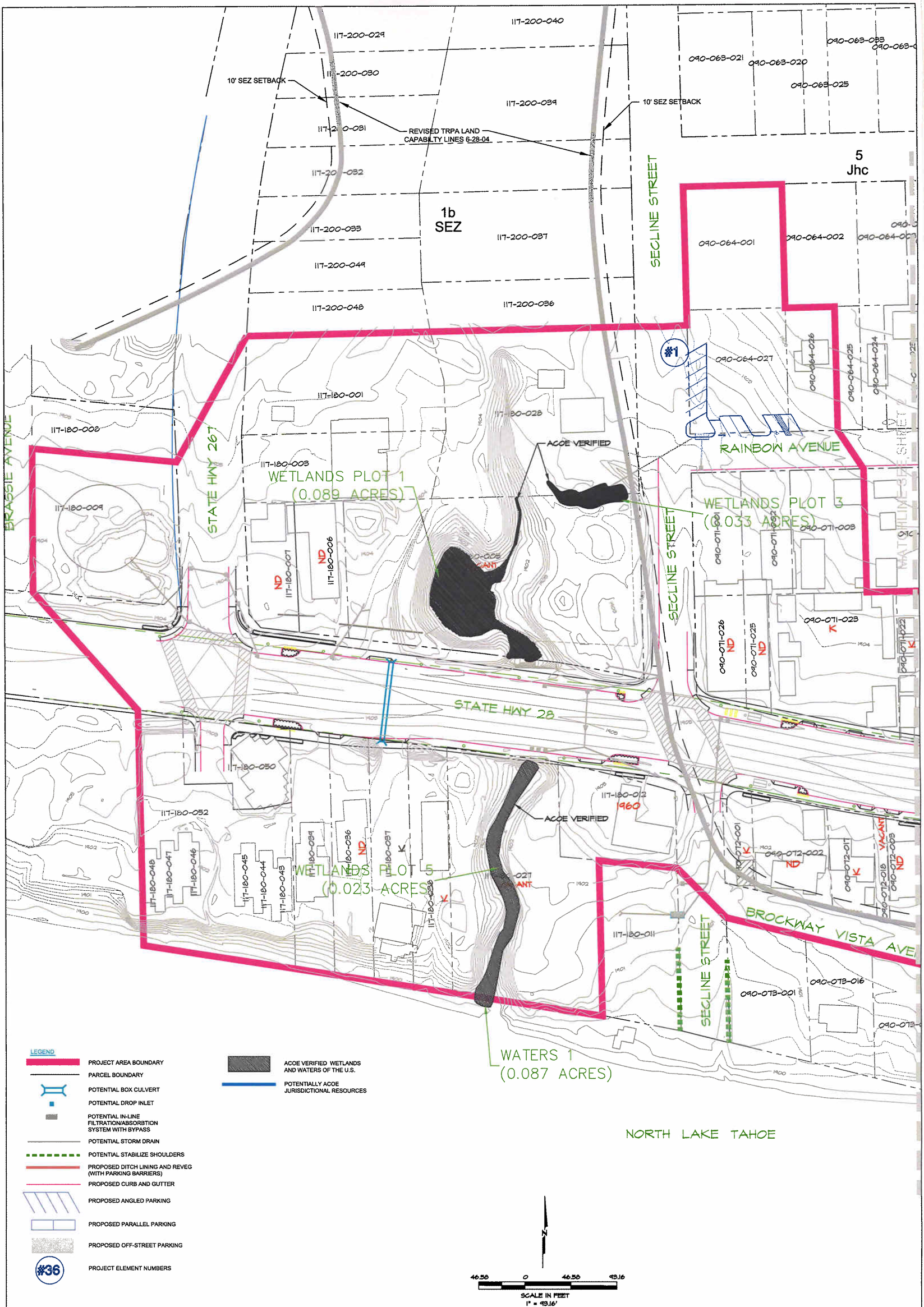
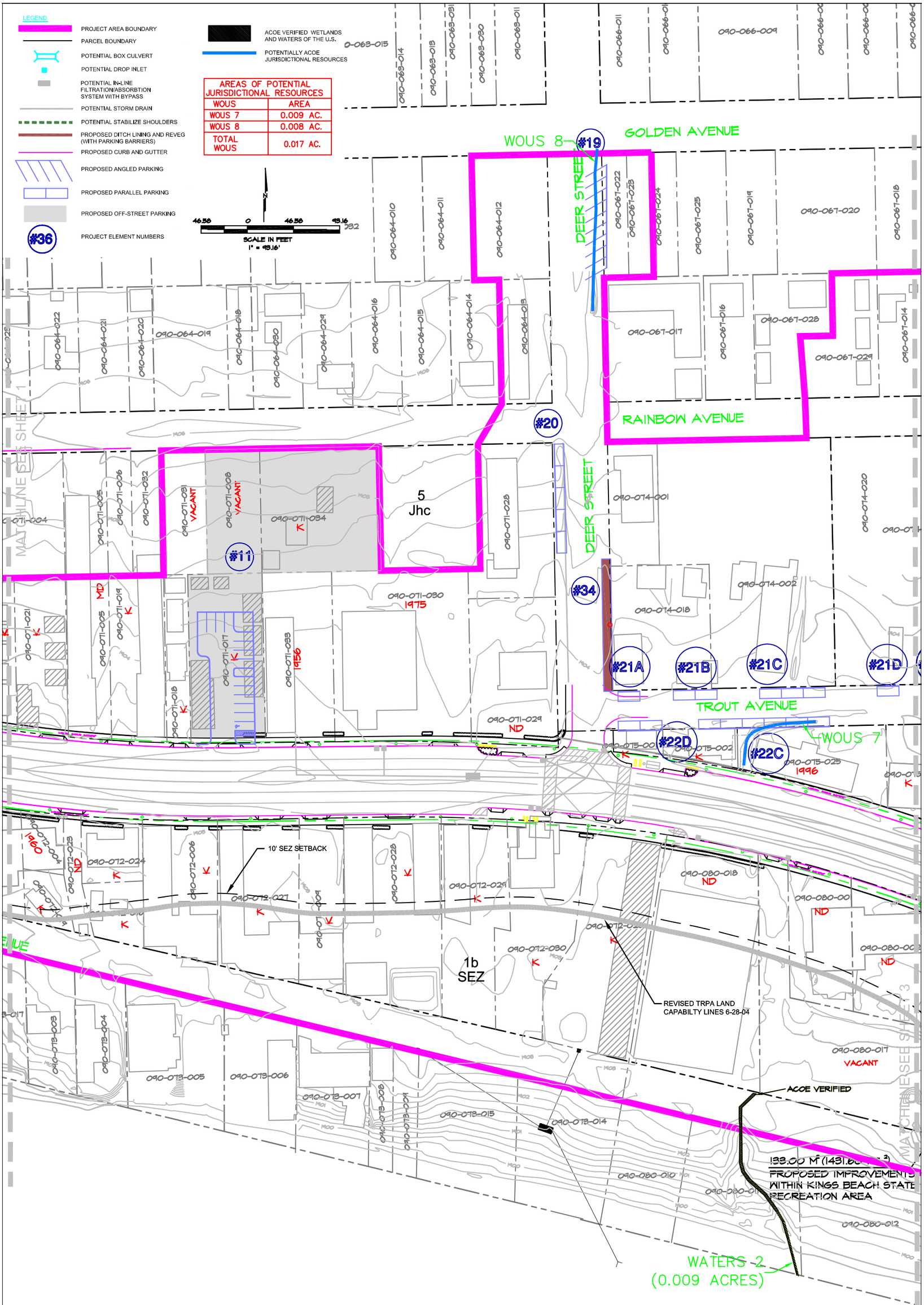


Figure 3 Sheet 1 of 6
Kings Beach Comercial Core Improvement Project
Potential and Previously Verified Jerisdictional Resoures



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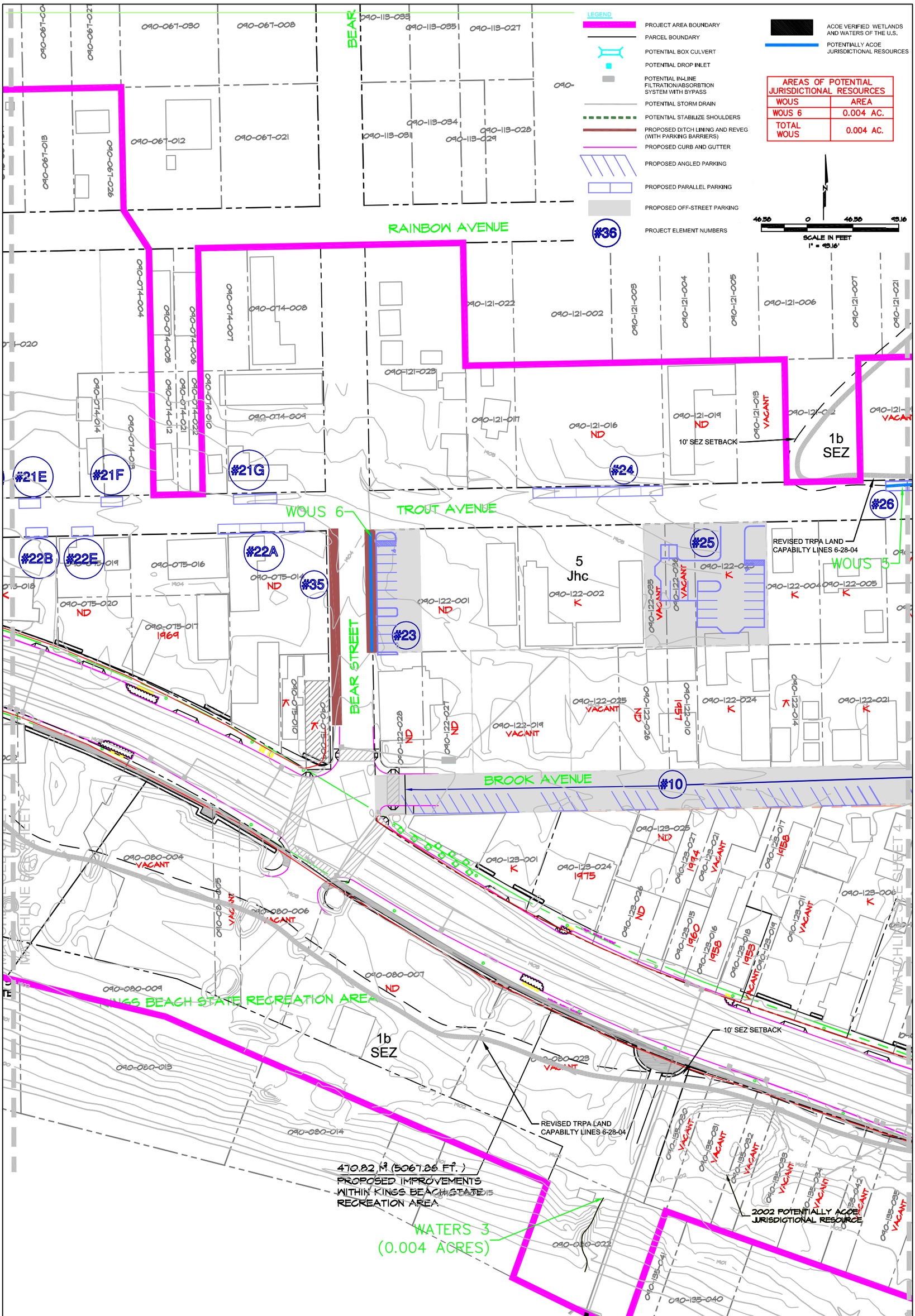

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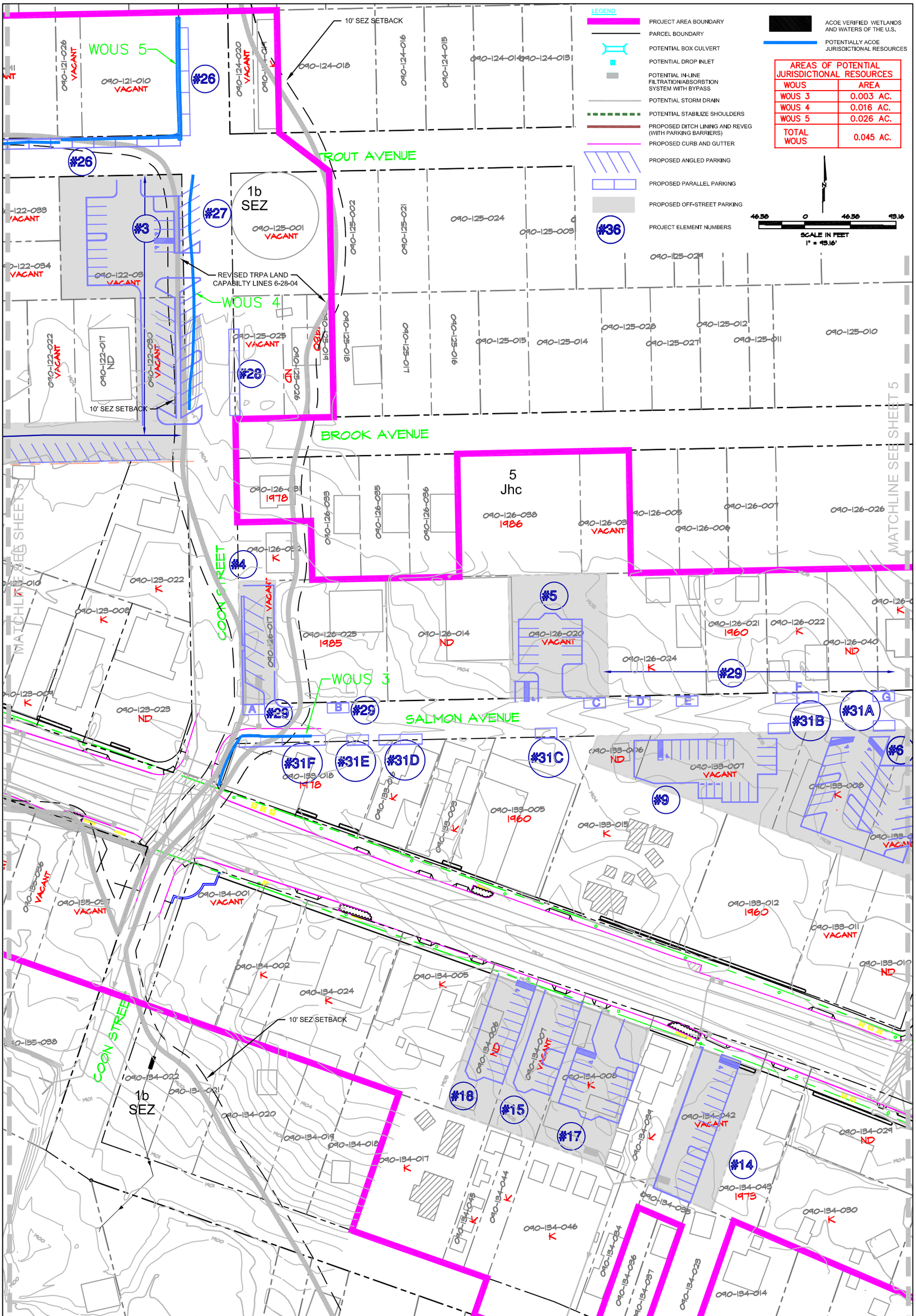

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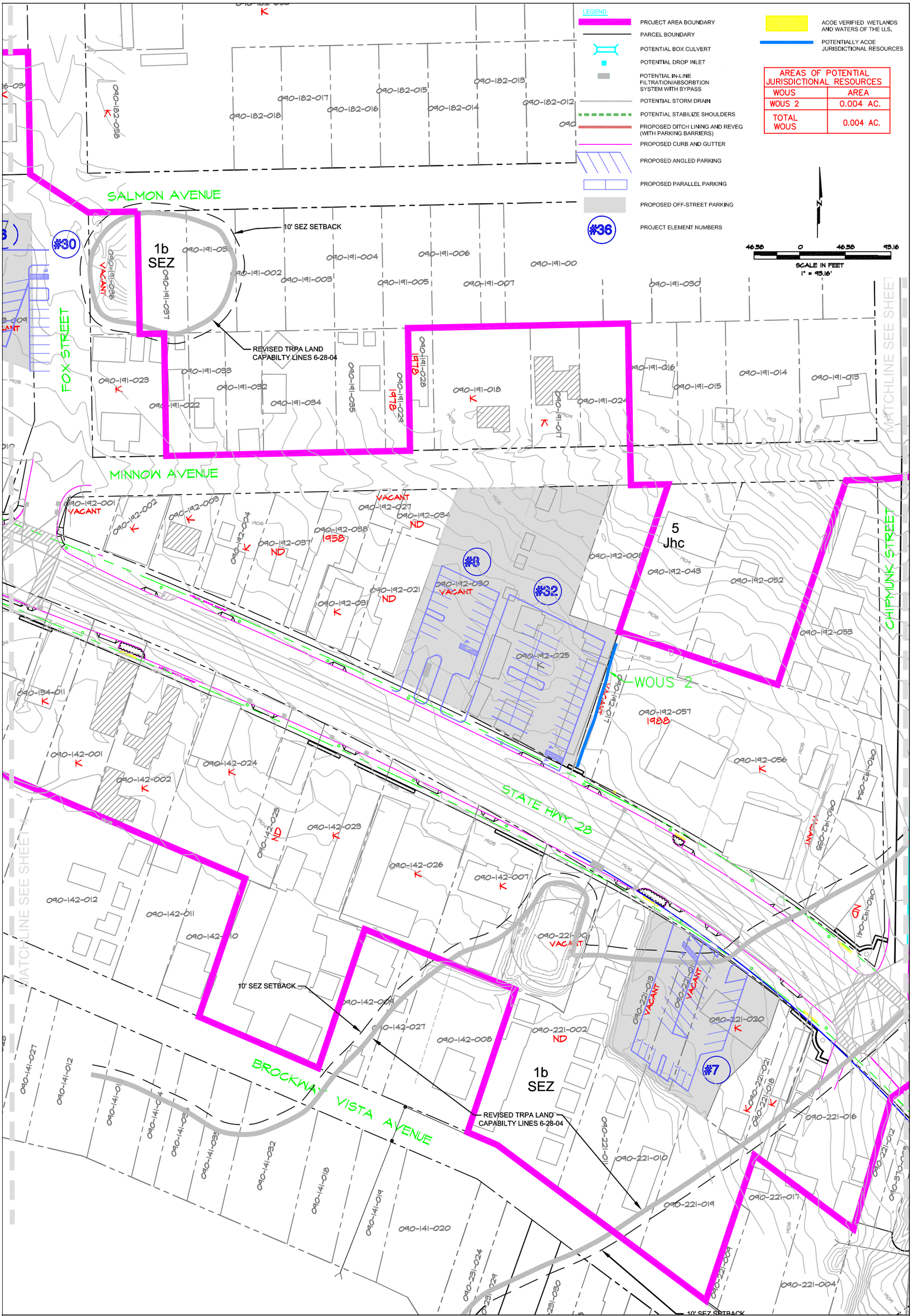

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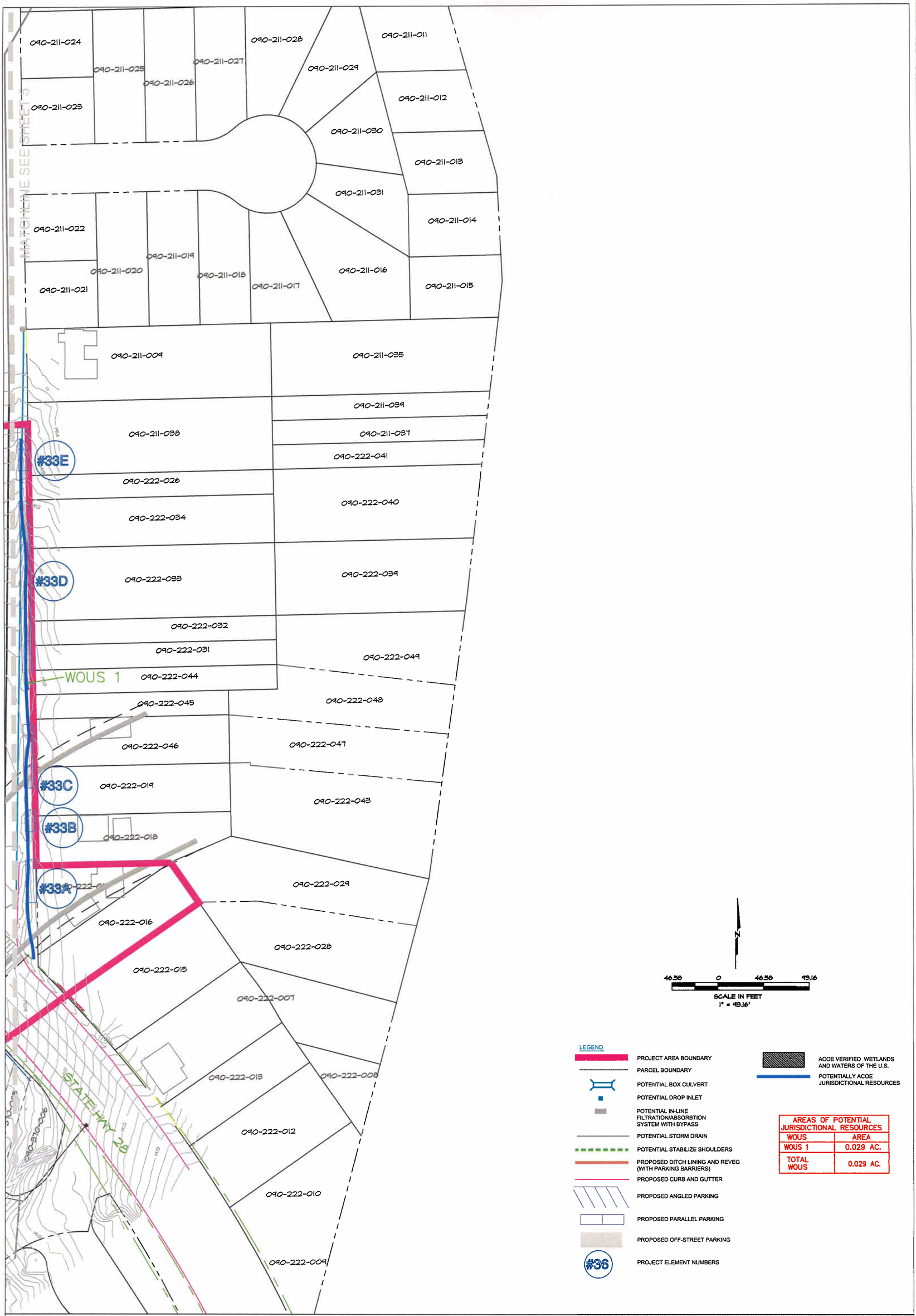

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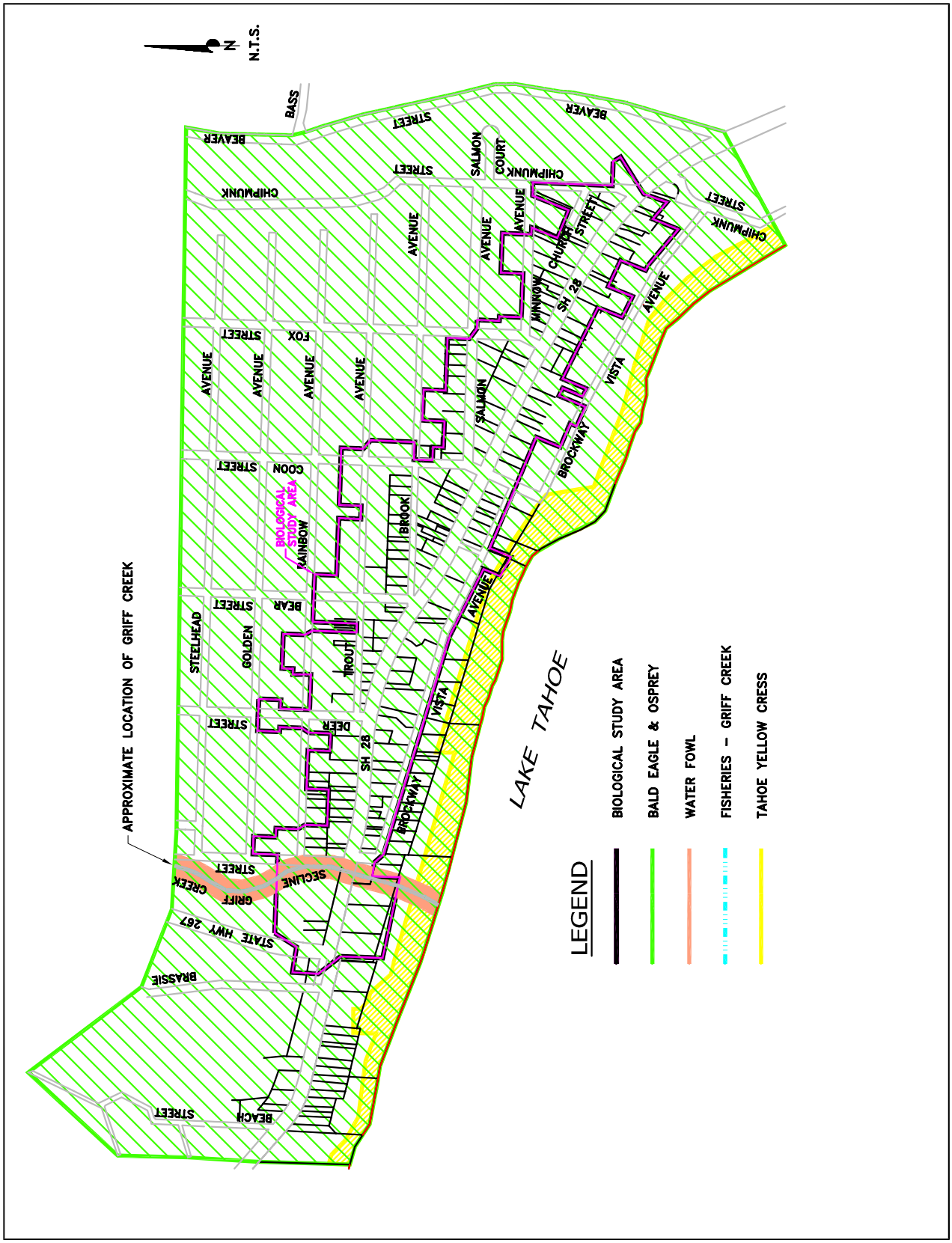

Figure 4
Special Status Species
Wildlife and Plant Habitat Map

3.1.3.2 Stream Environment Zones

TRPA land use classifications define SEZs as very sensitive, with a low tolerance for disturbance. They are therefore considered special-status communities. The TRPA performed a formal land capability verification of the Project area and provided Placer County with a map of the verified land capability boundaries on June 28, 2004 (Zeier 2004). The SEZ area designated by TRPA within the BSA covers approximately 84.58 hectares (209 acres). Land capability 1b indicates the presence of SEZs, as shown on Figures 2 and 3, and includes the 3.058-m (10-ft) SEZ setback. Within the BSA, verified SEZs are located within the vicinity of Griff Creek; south of SR 28 to and including the lakefront to just east of Coon Street; from near the intersection of Trout Avenue and Coon Street, following Coon Street to the lake; the corner of Salmon Avenue and Fox Street; and the southeast corner of the BSA.

3.1.3.3 Wetlands and Other Waters of the U.S.

Figure 3 shows the distribution and area of the wetlands and waters of the United States within the BSA. Based on the 2002 MACTEC delineation of the Project area, these wetland features include 0.50 hectare (1.23 acres) of wetlands and 0.18 hectare (0.29 acre) of other waters of the United States, including Griff Creek and a portion of an ephemeral stream. A follow-up delineation in 2004 identified the drainage ditches adjacent to various roadways as additional potential wetland areas. Of all these areas, the Corps has verified only 0.06 hectare (0.146 acre) of jurisdictional wetlands in 2001 (Appendix E). The Corps has not yet verified the 2002 and 2004 wetland delineations.

3.1.3.4 Weedy Plants

Both perennial and annual introduced weedy plant species were observed during the 2001, 2002, and 2004 field surveys. All noxious weed locations identified during these field surveys are presented in Figure 3.

The 2001 surveys for weedy plants in the BSA found no established populations of federally designated noxious weeds and no plants listed as exotic or potentially invasive in the *Focal Vascular Plant Species of the Lake Tahoe Basin* (Manley and Schlesinger 2000). However, the California Invasive Plant Council (Cal-IPC 1999) list indicated bouncingbet (*Saponaria officinallis*), bull thistle (*Cirsium vulgare*), and common muellin (*Verbascum thapsus*) as Group 2/ List B Priority Invasive Weeds of the Tahoe Basin (manage infestations with a goal of eradication) and wildland plants of lesser invasiveness. Bouncingbet was located in the Kings Beach Recreation Area, bull thistle on the northeast corner of Coon Street and Brook Avenue, and common muellin around the perimeter of the Griff Creek containment pond.

During the 2002 field surveys, two California designated noxious weeds, diffuse knapweed (*Centaurea diffusa*) and scotch broom (*Cytisus scoparius*), were found within the BSA area. Diffuse knapweed is an introduced List A California noxious weed species and a Group 1 Priority Invasive Weed of the Tahoe Basin (watch for, report, and eradicate immediately). Six knapweed plants were observed on the east side of Secline Avenue south of SR 28 in the park area. Scotch broom is an introduced List C California noxious weed species and a Group 1 Priority Invasive Weed of the Tahoe Basin. The scotch broom was observed on the west side of Secline Avenue, south of SR 28.

Other plant species found in the BSA during 2001 and 2002 and identified as exotic (non-native, introduced) by the *Focal Vascular Plant Species of the Lake Tahoe Basin*, include narrowleaf plantain (*Plantago lanceolata*), fowl bluegrass (*Poa palustris*), Kentucky bluegrass, tumblemustard (*Sisymbrium altissimum*), and common dandelion (*Taraxacum officinale*). Kentucky bluegrass is established in cultivated lawn areas in association with common dandelion and buckhorn plantain. Moist understory riparian areas supported fowl bluegrass and Kentucky bluegrass, where they have become naturalized. Common weedy species encountered on disturbed soils include goatsbeard (*Tragopogon dubius*), prickly lettuce (*Lactuca serriola*), filaree (*Erodium cicutarium*), and white sweetclover (*Melilotus alba*). The Cal-IPC list indicated black locust (*Robina psuedoacacia*), bouncingbet and common muellin as wildland pest plants of lesser invasiveness. Black locust and bouncingbet were located in the Kings Beach State Recreation Area and appear to be cultivated as ornamentals. Common muellin was found primarily around the perimeter of the Griff Creek containment pond.

No California designated noxious weeds were observed during the 2004 field surveys. However, a few bull thistle rosettes were identified as occurring within the BSA (see Figure 3).

3.1.3.5 Wildlife and Wildlife Habitat

The BSA covers approximately 325.8 hectares (805 acres), including a portion of SR 28 and residential and commercial surface streets adjacent to developed (urban) and undeveloped parcels. The dominant wildlife habitat type, as described in the California Wildlife Habitat Relationship System (DFG 1988), that occurs within the Project area is Jeffrey pine, with an urban component (313.82 hectares [775.4 acres]) interspersed throughout. In addition, 4.45 hectares (11.0 acres) of montane riparian habitat is found in the Project area. The Jeffrey pine/urban and montane riparian habitats were observed within residential, commercial, and undeveloped parcels of the Project area.

Jeffrey Pine/Urban

The dominant Jeffrey pine habitat occurs throughout the BSA and is interspersed with urban (commercial and residential) habitat. Other tree species occurring within the Jeffrey pine/urban habitat include ponderosa pine, white fir, and incense-cedar. Human disturbance associated with development within the BSA limits utilization of the area by special-status, special interest, and management indicator species sensitive to human activities, including the bald eagle (*Haliaeetus leucocephalus*) and osprey (*Pandion haliaetus*). Although foraging and wintering habitat for the bald eagle and osprey are available in the BSA, these species are unlikely to occur due to the high levels of human disturbance and development.

Many wildlife species utilizing the BSA area including Jeffrey pine/urban habitat will tolerate forests fragmented by urban development, especially when alternate food sources are available. Common mammal species known to utilize Jeffrey pine/urban areas include the chipmunk (*Eutamias* sp.), golden-mantled ground squirrel (*Spermophilus lateralis*), and Douglas' squirrel (*Tamiascirus douglasii*). Although less common, the Western gray squirrel (*Sciurus griseus*) was the only squirrel species to be observed in the BSA. The black bear (*Ursus americanus),* a LTBMU management indicator species, has adapted to urban development and is a frequent visitor to garbage cans and dumpsters. Numerous birds have adapted to this urban environment and reside in the BSA. Common birds species observed within the BSA include the mountain

chickadee (*Poecile gambeli*), American robin, Steller's jay, mourning dove (*Zenaida macroura*), warbling vireo (*Vireo gilvus*), and others as listed in Appendix B.

Montane Riparian

The montane riparian (MRI) habitat within the BSA is fragmented, with the most contiguous portion occurring within the Griff Creek SEZ. Other limited MRI habitat areas are scattered throughout the BSA, as presented in Figure 3. The overstory vegetation for this habitat includes quaking aspen, black cottonwood, and/or white poplar. The understory is comprised of Woods rose and/or chokecherry. Migratory birds and other special-status wildlife have the potential to occur within these limited areas of MRI habitat. The section of Griff Creek occurring within the BSA provides suitable habitat for migratory birds, waterfowl, and fish (Appendix B).

3.1.3.6 Migration Corridors

Wildlife migration corridors within the Kings Beach BSA are very limited in size. The riparian zones adjacent to Griff Creek, an additional ephemeral creek, and several scattered wetland areas provide the only MRI habitat for migratory birds and waterfowl in the BSA. Large and small resident mammal, reptile, and amphibian species may also use the Griff Creek corridor for seasonal migration movements, although none were observed during the field surveys. Griff Creek provides migratory and breeding habitat for brook and rainbow trout.

3.2 Regional Context

Table 2 identifies those species and natural communities of concern designated by USFWS, DFG, TRPA, and LTBMU with the potential to occur in the Lake Tahoe Basin area. Wildlife and plant species for which suitable habitat occurs within or in the vicinity of the BSA are indicated in Table 2 and are discussed after the table. Those species identified as not having suitable habitat within the BSA are not discussed further in this report. The regional species and natural communities of concern identified in Table 2 were obtained through consultation with USFWS, DFG, LTBMU, and TRPA (Appendix D).

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Table 2. Regional Species and Natural Communities of Concern

Scientific Name	Common Name	Status[1]	General Habitat Description	Habitat Present (P) Absent (A)	Rationale
Mammals					
Aplodontia rufa californica	Sierra Nevada Mountain Beaver	DFG (CSC)	Occurs within dense forest and thickets, usually in moist soils and near and abundant supply of water	A	Limited habitat in SEZ but highly disturbed by nearby human activity
Corynorhinus townsendii	Townsend's Big-eared Bat	LTBMU (S), USFWS (SC), DFG (CSC)	Commonly occurs in mesic habitats characterized by coniferous and deciduous forests	A	Limited suitable habitat in BSA. No records of this species in the vicinity; no detections during acoustic survey
Gulo gulo	California Wolverine	LTBMU (S), DFG (FP)	Mixed conifer, red fir and lodgepole habitats with dense cover, open areas and low human disturbance.	A	Limited and patchy urban/mixed conifer habitat that is low in cover and high in human disturbance.
Lepus americanus tahoensis	Sierra Nevada Snoshoe Hare	DFG (CSC)	Prefers dense cover of coniferous and mixed forests with abundant understory cover. Also utilizes coniferous swamps adnacent ot mixed forests	A	Limited habitat in Griff Creek SEZ, but isolated and highly disturbed with human activity.
Martesamericana	American Marten	LTBMU (S) USFWS (SC)	Mixed evergreen forests with more than 40% crown closure, with large trees and snags. Habitat with limited human use is important.	A	Limited and patchy Jeffrey pine/urban habitat with greater than 40% canopy cover. High human disturbance.
Martes pennanti	Fisher	USFWS (C)	Large areas of dense mature (intermediate to large) trees in coniferous forests, deciduous riparian habitats, snags and a high percentage of canopy cover.	A	Limited and patchy mature Jeffrey pine/urban habitat with greater than 40% canopy cover. High human disturbance.

Table 2. Regional Species and Natural Communities of Concern (continued)

Scientific Name	Common Name	Status[1]	General Habitat Description	Habitat Present (P) Absent (A)	Rationale
Odocoileus hemionus	Mule Deer	TRPA (SI), LTBMU (MIS)	Intermediate successional stages of most forest, woodland, and brush habitats. Prefer a mosaic of woody cover, meadow, shrubby openings, and water habitats.	A	Fragmented urban coniferous forest and riparian habitat. Minimal forage and protective cover.
Taxidea taxus	American Badger	DFG (CSC)	Most abundant in drier open stages of most shrub, forest and herbaceous habitats with friable soils.	A	Existing limited habitat with friable soils is highly disturbed by development and human activity.
Ursus americanus	Black Bear	LTBMU (MIS)	Dense stands of mature forests including brushy forests, riparian and wet meadow habitats.	P	Species known to frequent urban/forest areas of Lake Tahoe.
Vulpes vulpes necator	Sierra Nevada Red Fox	LTBMU (S), USFWS	A variety of habitats including wet-meadow, montane chapparal, montane riparian, mixed conifer, red fir, lodgepole pine and Ponderosa pine. Dense vegetation required for cover and denning. Open areas for hunting.	A	Limited and patchy urban/coniferous habitat and dense vegetation for cover and denning.
Birds					
Accipiter gentillis	Northern Goshawk	TRPA (SI), LTBMU (S), USFWS (SC), DFG (CSC)	Mature and old-growth dense conifer forests and deciduous habitats, interspersed with meadows, openings, and riparian areas.	A	Limited and patchy urban/forest with no meadows. High human disturbance.
Anas platyrhynchos	Mallard	TRPA (SI), LTBMU (MIS)	Fresh emergent wetlands, riverine habitats and ponds.	P	Griff Creek and the associated retention pond provide mallard nesting and foraging habitats.
Aquila chrysaetos	Golden Eagle	TRPA (SI), DFG (CSC)	Mountain terrain with open slopes, cliffs, and rock outcrops.	A	Absence of open slopes, cliffs, and rock outcrops.
Dendragapus obscurus	Blue Grouse	LTBMU (MIS)	Medium to mature coniferous habitats with open brushy areas, open grass/forb areas all close to water.	A	Limited and patchy urban/mature forest with no large open brushy or grass/forb areas.

Table 2. Regional Species and Natural Communities of Concern (continued)

Scientific Name	Common Name	Status[1]	General Habitat Description	Habitat Present (P) Absent (A)	Rationale
Dryocopus pileatus	Pileated Woodpecker	LTBMU (MIS)	Large areas of mature coniferous forests (100–300 years old), large snags and a permanent source of water.	A	Limited and patchy urban/mature coniferous forest with no large snags and high human disturbance.
Empidonax traillii	Willow Flycatcher	LTBMU (S)	Wet meadows, ponds, and montane riparian habitats that contain extensive thickets of low willows.	A	Absence of thick and extensive thickets of low willows.
Falco peregrinus anatum	American Peregrine Falcon	TRPA (SI), DFG (FP)	Woodlands, forests and coastal habitats with cliffs and water nearby.	A	Absence of cliffs for cover and nesting.
Haliaeetus leucocephalus	Bald Eagle	USFWS (T), TRPA (SI), DFG (FP)	Mature coniferous forests with dominant and co-dominant trees. Large body of water within one mile. Limited human disturbance.	P	High human disturbance precludes suitable nesting habitat and offers limited roosting habitat
Pandion haliaeetus	Osprey	TRPA (SI)	Open forests with large snags and near open water.	P	High human disturbance precludes suitable nesting habitat and offers limited roosting habitat
Strix nebulosa	Great Gray Owl	LTBMU (S), DFG (CSC)	Old-growth red fir, mixed conifer or lodgepole pine habitats with nearby wet meadows. Large broken top snags for nesting.	A	Limited and patchy urban/old-growth mixed confer habitat. No large snags and no meadows.
Strix occidentalis occidentalis	California Spotted Owl	LTBMU (S), USFWS (SC), DFG (CSC)	Large areas of mature forest with large snags and a permanent source of water.	A	Limited and patchy urban/mature coniferous forest with no large snags and high human disturbance.
Not applicable	Waterfowl Species[2]	TRPA	Fresh emergent wetlands, riparian habitats, ponds, and large water body.	P	Waterfowl species known to frequent Lake Tahoe and Griff Creek habitats.
Not applicable	Migratory Birds[3]	USFWS (SC)	Utilize a variety of habitats including montane forest, riparian, and urban/forest.	P	Presence of migratory bird species throughout all habitat types.

Table 2. Regional Species and Natural Communities of Concern (continued)

Scientific Name	Common Name	Status[1]	General Habitat Description	Habitat Present (P) Absent (A)	Rationale
Fish					
Gila bicolor pectinifer	Lahontan Lake Tui Chub	LTBMU (S), DFG (CSC)	Higher water column of large deep lakes.	A	Griff Creek does not provide required deep lake habitat.
Oncorhynchus clarki henshawi	Lahontan Cutthroat Trout	USFWS (T), TRPA (SI)	Large terminal lakes, alpine lakes, slow meandering low-gradient rivers, moderate-gradient montane rivers, and small headwater tributary stream.	A	No known occurrence of Lahontan Cutthroat trout in the Griff Creek stream channel.
Oncorhynchus mykiss	Rainbow Trout	LTBMU (MIS)	Fresh water, moderate to fast flowing, well oxygenated waters for breeding.	P	Presence of habitat (Griff Creek) and known occurrences of species.
Salvelins fontinalis	Brook Trout	LTBMU (MIS)	Small, cold, and clean streams, ponds, and lakes.	P	Presence of habitat (Griff Creek) and known occurrences of species.
Amphibians					
Rana muscosa	Mountain Yellow-legged Frog	LTBMU (S) USFWS (C) DFG (CSC)	Streams, lakes, and ponds in montane riparian, lodgepole pine, subalpine conifer, and wet meadow habitat types.	A	Limited, patchy urban/montane riparian and wet meadow habitats. No known occurrences in Griff Ck.
Rana pipiens	Northern Leopard Frog	LTBMU (S), DFG (CSC)	Quiet permanent or semi-permanent water in many habitats.	A	Limited and patchy urban/montane riparian and wet meadow habitats with quiet waters.
Plants					
Arabis rectissima var. simulans	Washoe Tall Rockcress	LTBMU (LSI)	Dry, sandy granitic or andesitic soils on gentle slopes within open, mature Jeffrey pine dominated forests, often on recovering lightly disturbed soils. Elevations range from 1,839 m (6,035 ft) to 2,240 m (7,350 ft).	P	Required habitat and elevation range of species present.